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BALDCYPRESS

... *an American wood*

Baldcypress is widely distributed throughout the southern and southeastern United States with heaviest stands in the swamps of the lower Mississippi Valley and Florida. Sapwood is nearly white; heartwood ranges from light yellowish brown to dark reddish brown. Heartwood offers moderate resistance to decay. Baldcypress wood is of moderate weight and strength, has excellent paint holding ability, and does not impart taste or odor to food products. It is used principally in buildings and for veneer and interior trim and paneling.

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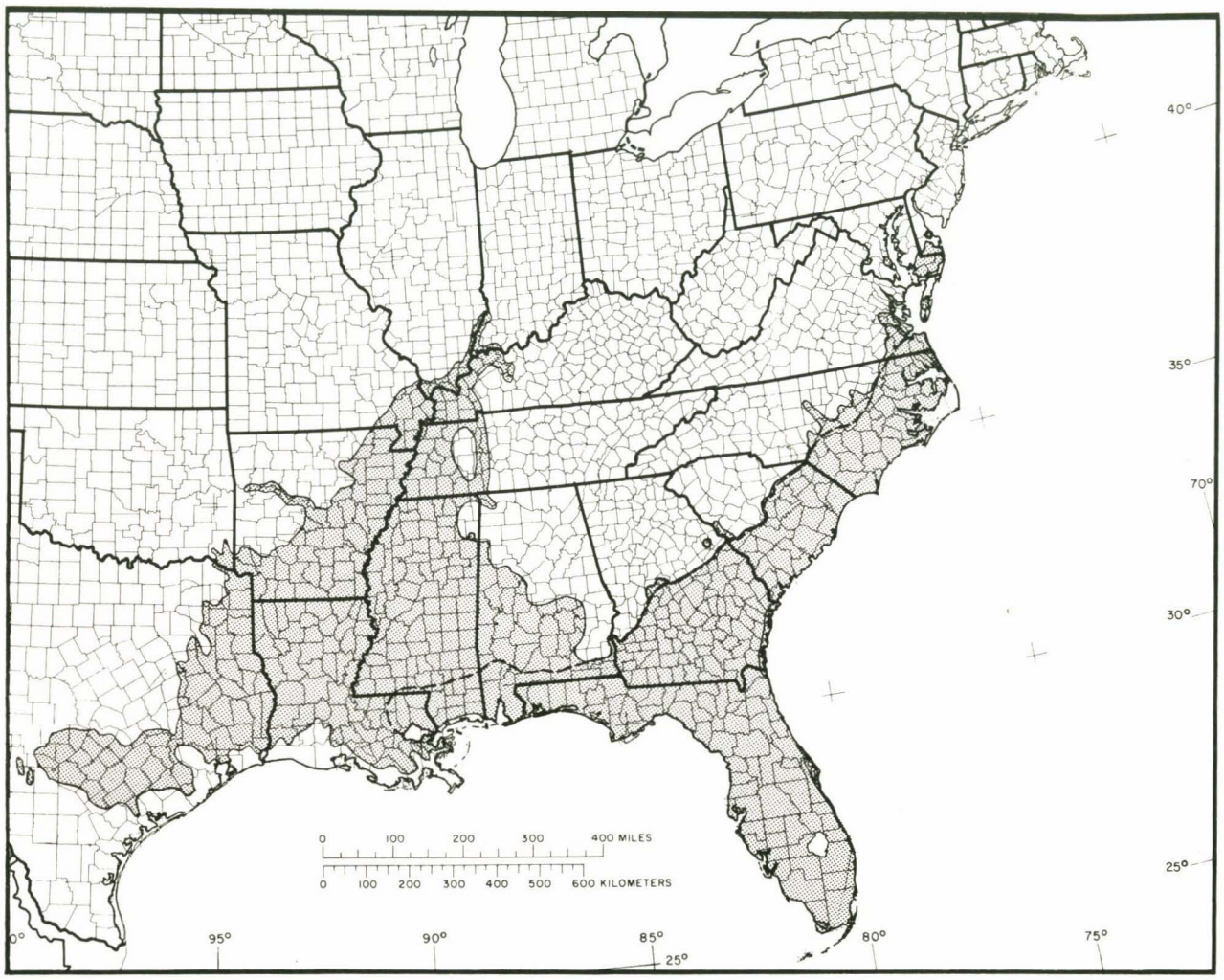

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Figure 1.—Natural range of baldcypress, *Taxodium distichum*. The broken line indicates the northern limit of the variety pondcypress, *T. distichum* var. *nutans* (Ait.) Sweet.

Cover tree—F-24973

BALDCYPRESS

Taxodium distichum

Harvey E. Kennedy, Jr.[1]

DISTRIBUTION

The range of baldcypress (*Taxodium distichum* (L.) Rich.) extends along the Atlantic Coastal Plain from Delaware to southern Florida, westward through the gulf coast region to southeastern Texas, and up the Mississippi Valley to southeastern Illinois and southwestern Indiana (fig. 1). The heaviest stands occur in the extensive swamps of the lower Mississippi Valley and Florida, where pure stands of baldcypress formerly covered large areas. The coastal river swamps of North and South Carolina and Georgia and the inland swamp districts along the Mississippi River also contain extensive baldcypress forests. The variety known as pondcypress (*Taxodium distichum* var. *nutans*) is found close to the coast from southeastern Virginia to southeastern Louisiana, especially in the Atlantic Coastal Plain (fig. 1). It is commonly cut and sold with baldcypress without distinction.

DESCRIPTION AND GROWTH

Baldcypress or "cypress" is a long-lived tree that grows to large size throughout the swamps of Southern and Southeastern United States. The heartwood, noted for its durability, is especially suited for construction where resistance to decay is required. The tree develops an expanded conical base or "swell-butt," often deeply lobed, and an extensive root system that gives it good anchorage even in soft, wet soils. In places where water covers the ground for long periods, baldcypress produces peculiar conical growths known as knees (fig. 2), which extend upward from the roots for several feet above the water surface. The function of these knees is not definitely known, but it has been suggested that they serve both as anchors and as organs that supply additional oxygen to the roots. In any event, baldcypress is extremely windfirm even in soft, wet soils. Even winds of hurricane force rarely overturn it.

The original supply of baldcypress (virgin stands) has been depleted, and the species is not reproducing in some areas of cutover swamps. Trees grow slowly under forest conditions, generally requiring two centuries to reach a size large enough to have a high proportion of heartwood lumber. In old virgin stands, trees sometimes attained an age of 800 years, a diameter of 6 feet above the swell butt, and a height of 120 feet. Occasional trees were as much as 1,200 years old, 8 feet in diameter above the swell, and 150 feet tall. Most of the cut today is from trees 100 to 450 years old that are from 12 to 30 inches in diameter above the butt swell.

Baldcypress grows best on deep, fine, sandy loams with plenty of moisture in the surface layers and moderately good drainage. However, it is rarely found on such sites, probably because of excessive competition from hardwoods, and is most often restricted to very wet sites or permanent swamps. Cypress grows best in warm climates, but will grow under a considerable range of climates. In Louisiana, 200-year-old trees had an average diameter of 20 inches breast high and an average diameter of 12.8 inches outside the bark at 20 feet above the groundline. Second-growth or open-grown trees grow much faster. In Maryland, 100-year-old second-growth trees have an average diameter of 21.8 inches breast high and 8.7 inches at 20 feet above the groundline. A typical second-growth baldcypress is shown in figure 3.

The heartwood of living baldcypress trees, especially the overmature ones, is susceptible to attack by a fungus of the genus *Stereum* that causes what is known as "pecky" cypress.[2] The fungus may destroy a considerable part of the heartwood at the base of mature trees growing under very wet conditions. The action of the fungus ceases when the tree is felled. The durability of baldcypress lumber, as far as is known, is not affected by the presence of "pecky" material.

[1] Silviculturist, USDA, Forest Service, Southern Forest Experiment Station.

NOTE: This publication supersedes unnumbered publication, Baldcypress, 1945.

[2] Characterized by finger-sized pockets left from fungal attacks in the living tree.

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Figure 2.—Baldcypress "knees" may anchor the tree and supply additional oxygen.

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Figure 3.—A typical second-growth baldcypress.

Baldcypress is a key species in the baldcypress and baldcypress-water tupelo forest types. Its chief associates are water tupelo in the alluvial flood plains or swamp tupelo in the Coastal Plain swamps. Other common associates are black willow, swamp cottonwood, red maple, American elm, pumpkin ash, Carolina ash, water-locust, persimmon, overcup oak, and water hickory. It may be associated with sweetgum, Nuttall oak, laurel oak, and sweetbay on the less moist sites. The baldcypress type usually reverts to the baldcypress-water tupelo or water tupelo type after heavy cutting.

Baldcypress produces some seed almost every year, with good crops about every 3 years. Cones contain 18 to 30 seeds which ripen from October to December. Seeds may break away from the cone, or the entire cone may drop to the ground. Cones contain pockets of red, sticky liquid resin that may act as a repellent, since seeds are seldom taken by birds or rodents. Because they are relatively large, cypress seeds are not dispersed by wind. Floodwaters of rivers and streams are the most important method of seed dissemination. Seed germination usually averages 40 to 60 percent, ranging from as low as 9 percent when conditions are poor to as high as 87 percent when conditions are ideal.

Flower buds of baldcypress appear in late December or early January. Male and female flowers are borne separately on the same tree. Male flowers are minute and purple; they grow in drooping panicles 4 to 6 inches long at the end of the preceding year's shoots. Female flowers are inconspicuous and composed of several spirally arranged, overlapping scales, each scale bearing two ovules. The fruit is a globose cone, closed, three-fourths to 1 inch in diameter, formed by the enlargement of the spirally arranged pistillate flower scales (fig. 4). The seed are two-winged, erect, and borne under each scale. Leaves are deciduous, alternate, two-ranked, one-half to three-quarters inch long, flat, sessile,[3] entire,[4] light green, and lustrous. Flowering branches sometimes bear awl-shaped leaves. The deciduous habit is unusual for a conifer.

Bark of baldcypress is gray to cinnamon brown, thin, closely appressed, fairly smooth, and finely divided by longitudinal shallow fissures (fig. 5).

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Figure 4.—Fruit and leaves of baldcypress.

[3] *Sessile:* a leaf without a stem at its base.
[4] *Entire:* a leaf without teeth or other divisions such as lobes.

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Figure 5.—Bark of baldcypress.

COMMON NAMES

Baldcypress is the preferred common name for *Taxodium distichum*, but it is also called common baldcypress, gulf cypress, red cypress, tidewater red cypress, white cypress, yellow cypress, and cypress. Although *T. distichum* var. *nutans* is preferably called pondcypress, it also goes by the names of pond baldcypress and cypress.

SUPPLY

The total volume of baldcypress sawtimber in the United States was estimated at 17.2 billion board feet in 1965. The largest volumes occur in the States of Florida and Louisiana which respectively contain about 32 and 26 percent of the total. Altogether the States of Georgia, North Carolina, and South Carolina contain about 24 percent.

The remaining volume was in the coastal and river swamps of Alabama, Arkansas, Mississippi, Virginia, and other Southern States.

The present volume of cypress is considerably smaller than in earlier years. In 1909 the total volume of sawtimber was estimated at 40 billion board feet and in 1920 at about 23 billion board feet.

PRODUCTION

The production of baldcypress lumber rose from about 29 million board feet in 1869, the earliest year for which statistics are available, to about 1.1 billion board feet in 1913. Since 1913, production has decreased fairly steadily, reflecting the declining volume of sawtimber available for use. In 1954, the last year in which the Bureau of the Census reported cypress as a separate item, production totaled 240 million board feet.

CHARACTERISTICS AND PROPERTIES

Sapwood of baldcypress is nearly white; heartwood ranges from light yellowish brown to dark brown, reddish brown, or chocolate. Even though color variations occur in the same locality, the baldcypress lumber produced from tidewater regions, especially within a belt 100 miles from salt water along the Gulf of Mexico and the southeastern Atlantic coast region, usually runs heavily to the darker colored wood and is referred to by the trade as tidewater red cypress. Wood from the Florida swamps is sometimes dark in color with lighter streaks that give a rich effect to interior paneling. The inland types of baldcypress, known as white or yellow cypress, have the same cell structure as the tidewater red cypress; but the heartwood is generally lighter in color, and the percentage of sapwood is usually greater than that of the red or coastal type.

The reputation for natural decay resistance of baldcypress applies only to the heartwood, which contains toxic substances that protect against decay. Second-growth baldcypress contains a relatively high proportion of sapwood which offers no significant advantage in decay resistance.

Wood of baldcypress is of moderate weight (32 pounds per cubic foot at 12 percent moisture content), strength, hardness, and pliability. It requires more care and time to kiln dry than do many other conifers. It can also be slowly air dried. Baldcypress wood ranks high in paint-holding ability and does not impart taste, odor, or color to food products.

PRINCIPAL USES

Baldcyress heartwood is used principally for building construction, especially for beams, posts, and other members in docks, warehouses, factories, bridges, and various classes of heavy construction. The heartwood is well suited for siding and porches because of its moderate decay resistance.

Althought the wood of baldcypress is used in a variety of products, over 75 percent of it goes into general millwork, containers (except cooperage), and caskets and burial boxes. There is an increasing demand for baldcypress for interior trim and paneling.

Other uses of baldcypress include tanks, vats, and tubs used in creameries, breweries, bakeries, dyeworks, distilleries, and soap factories; ship and boat building; refrigerators; car construction; patterns; and flasks. "Pecky" cypress is normally used in products where

durability rather than appearance or water tightness is required. But an exception is wall paneling, where it gives an interesting achitectural effect.

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